

## WEST Search History

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DATE: Tuesday, November 29, 2005

Hide?	<u>Set</u> <u>Name</u>	<u>Query</u>	<u>Hit</u> <u>Count</u>
		<i>DB=PGPB,USPT,EPAB,JPAB,DWPI,TDBD; PLUR=YES; OP=ADJ</i>	
<input type="checkbox"/>	L3	L2 and free carotenoid	34
<input type="checkbox"/>	L2	L1 and (emulsifier or bile or gum Arabic or salt of free fatty acid or lecithin or deoxycholate)	2446
<input type="checkbox"/>	L1	carotenoid	7387

END OF SEARCH HISTORY



# STIC Search Report

## Biotech-Chem Library

STIC Database Tracking Number: 169722

TO: Ralph J Gitomer  
Location: rem-3d65/3c18  
Art Unit: 1655  
Tuesday, November 29, 2005

Case Serial Number: 10/661606

From: Edward Hart  
Location: Biotech-Chem Library  
REM-1A55  
Phone: 571-272-2512

[edward.hart@uspto.gov](mailto:edward.hart@uspto.gov)

### Search Notes

Examiner Gitomer,

Here are the results of the search you requested.

Please feel free to contact me if you have any questions.

Edward Hart

=> file hcaplus

FILE 'HCAPLUS' ENTERED AT 11:00:00 ON 29 NOV 2005

USE IS SUBJECT TO THE TERMS OF YOUR STN CUSTOMER AGREEMENT.

PLEASE SEE "HELP USAGETERMS" FOR DETAILS.

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FILE COVERS 1907 - 29 Nov 2005 VOL 143 ISS 23

FILE LAST UPDATED: 28 Nov 2005 (20051128/ED)

New CAS Information Use Policies, enter HELP USAGETERMS for details.

This file contains CAS Registry Numbers for easy and accurate substance identification.

=> d stat que

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L1      2 SEA FILE=HCAPLUS ABB=ON PLU=ON (US2003-661606# OR WO2002-0039
      8# OR US2001-915527# OR US2001-292953#)/AP,PRN
      OR (US2004166199 OR US2002177181)/PN
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L3      36 SEA FILE=REGISTRY ABB=ON PLU=ON L2
L4      9 SEA FILE=REGISTRY ABB=ON PLU=ON (103955-77-7/BI OR 144-68-3/B
      I OR 152203-57-1/BI OR 465-42-9/BI OR 472-70-8/BI OR 60497-64-5
      /BI OR 64-17-5/BI OR 7235-40-7/BI OR 83-44-3/BI) AND L3
L5      8 SEA FILE=REGISTRY ABB=ON PLU=ON L4 NOT ETHANOL
L6      21783 SEA FILE=HCAPLUS ABB=ON PLU=ON L5
L7      21003 SEA FILE=HCAPLUS ABB=ON PLU=ON CAPSANTHIN OR CAPSOLUTEIN OR
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      BETACAROTENE OR PROVATEN?
L8      4892 SEA FILE=HCAPLUS ABB=ON PLU=ON ?CRYPTOXANTH? OR CARICAXANTHIN
      OR KRYPTOXANTHIN OR XANTHROPHYLL? OR ANCHOVYXANTHIN OR
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      ACID OR CHOLEREBC
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L13     23958 SEA FILE=HCAPLUS ABB=ON PLU=ON CAROTENIDS/BI
L14     5174 SEA FILE=HCAPLUS ABB=ON PLU=ON CAROTENIDS/CT
L15     40709 SEA FILE=HCAPLUS ABB=ON PLU=ON CAROTENES+OLD,NT/CT
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      OR L11 OR L12 OR L13 OR L14 OR L15)
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L22 548 SEA FILE=HCAPLUS ABB=ON PLU=ON L16 AND L21

L23 95 SEA FILE=HCAPLUS ABB=ON PLU=ON ("KANNER J"/AU OR "KANNER JAMES D"/AU OR "KANNER JOSEPH"/AU)

L24 18 SEA FILE=HCAPLUS ABB=ON PLU=ON ("GRANIT R"/AU OR "GRANIT RAGNAR"/AU)

L25 640 SEA FILE=HCAPLUS ABB=ON PLU=ON ("LEVY A"/AU OR "LEVY A A"/AU OR "LEVY A B"/AU OR "LEVY A C"/AU OR "LEVY A D"/AU OR "LEVY A G"/AU OR "LEVY A GOODMAN"/AU OR "LEVY A H"/AU OR "LEVY A HOYT"/AU OR "LEVY A J"/AU OR "LEVY A L"/AU OR "LEVY A M"/AU OR "LEVY A MICHAEL"/AU OR "LEVY A MICHEL"/AU OR "LEVY A P"/AU OR "LEVY A S"/AU OR "LEVY A V"/AU OR "LEVY A W"/AU)

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L27 758 SEA FILE=HCAPLUS ABB=ON PLU=ON (L23 OR L24 OR L25 OR L26)

L28 2 SEA FILE=HCAPLUS ABB=ON PLU=ON L27 AND L22

L29 546 SEA FILE=HCAPLUS ABB=ON PLU=ON L22 NOT L28

L30 427 SEA FILE=HCAPLUS ABB=ON PLU=ON L29 AND (PY<=2001 OR AY<=2001 OR PRY<=2001)

L31 23275 SEA FILE=HCAPLUS ABB=ON PLU=ON (EMULSIFIER/CT OR "EMULSIFIER L"/CT OR EMULSIFIERS/CT OR EMULSIFYING/CT OR "EMULSIFYING ACTIVITY FOOD PROPERTIES"/CT OR "EMULSIFYING AGENT"/CT OR "EMULSIFYING AGENTS"/CT OR "EMULSIFYING AGENTS (L) ANIONIC"/CT OR "EMULSIFYING AGENTS (L) CATIONIC"/CT OR "EMULSIFYING AGENTS (L) HYDROPHILIC"/CT OR "EMULSIFYING AGENTS (L) NONIONIC"/CT OR "EMULSIFYING AGENTS (L) REACTIVE"/CT OR "EMULSIFYING CAPACITY FOOD PROPERTIES"/CT OR "EMULSIFYING FOOD PROPERTIES"/CT OR EMULSIN/CT OR "EMULSIN MS"/CT OR EMULSINS/CT OR EMULSION/CT)

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L33 283694 SEA FILE=HCAPLUS ABB=ON PLU=ON EMULS?

L34 34 SEA FILE=HCAPLUS ABB=ON PLU=ON L30 AND (L31 OR L32 OR L33)

L36 6 SEA FILE=HCAPLUS ABB=ON PLU=ON L34 AND FOOD/SC,SX

L37 3 SEA FILE=HCAPLUS ABB=ON PLU=ON ("132:121794"/AN OR "133:149619"/AN OR "136:280782"/AN OR "2000:202055"/AN OR "2000:85025"/AN OR "2002:290946"/AN) AND L36

L38 5 SEA FILE=HCAPLUS ABB=ON PLU=ON L37 OR L28

=> d ibib abs hitstr l38 tot

L38 ANSWER 1 OF 5 HCAPLUS COPYRIGHT 2005 ACS on STN  
 ACCESSION NUMBER: 2004:701604 HCAPLUS  
 DOCUMENT NUMBER: 141:205763  
 TITLE: Increasing bioavailability of **carotenoids**  
 INVENTOR(S): **Kanner, Joseph; Granit, Rina; Levy, Arie**

PATENT ASSIGNEE(S): Agricultural Research Organization, the Volcani Center, Israel  
 SOURCE: U.S. Pat. Appl. Publ., 55 pp., Cont.-in-part of Appl. No. PCT/IL02/00398.  
 CODEN: USXXCO  
 DOCUMENT TYPE: Patent  
 LANGUAGE: English  
 FAMILY ACC. NUM. COUNT: 2  
 PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
US 2004166199	A1	20040826	US 2003-661606	20030915
US 2002177181	A1	20021128	US 2001-915527	20010727
WO 2002094982	A2	20021128	WO 2002-IL398	20020521
WO 2002094982	A3	20030530		
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PRIORITY APPLN. INFO.:  
 US 2001-292953P P 20010524  
 US 2001-915527 B1 20010727  
 WO 2002-IL398 A2 20020521  
 US 2003-661606 A 20030915

AB A method of increasing a fraction of free **carotenoids** in a source of **carotenoids** in which at least some of the **carotenoids** are fatty acid esterified **carotenoids** is disclosed. The method is effected by contacting the source of **carotenoids** with an effective amount of an esterase under conditions effective in deesterifying the fatty acid esterified **carotenoids**, thereby increasing the fraction of free **carotenoids** in the source of **carotenoids**.

IT 144-68-3P, Zeaxanthin 465-42-9P,

Capsanthin 103955-77-7P, Capsolutein

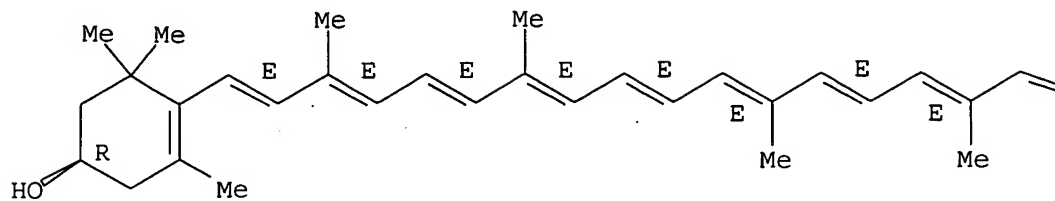
RL: BMF (Bioindustrial manufacture); BPN (Biosynthetic preparation); PUR (Purification or recovery); BIOL (Biological study); PREP (Preparation) (increasing bioavailability of **carotenoids**)

RN 144-68-3 HCAPLUS

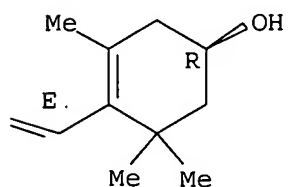
CN  $\beta,\beta$ -Carotene-3,3'-diol, (3R,3'R)- (9CI) (CA INDEX NAME)

Absolute stereochemistry.  
Double bond geometry as shown.

PAGE 1-A



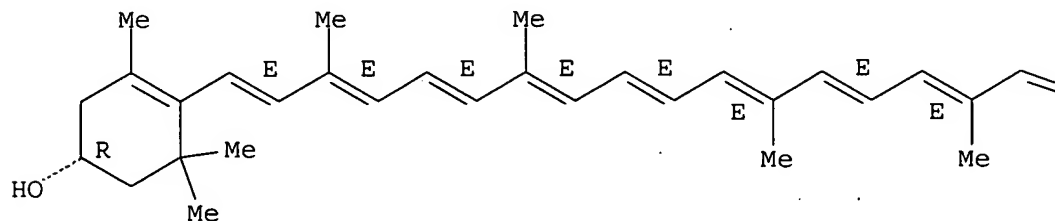
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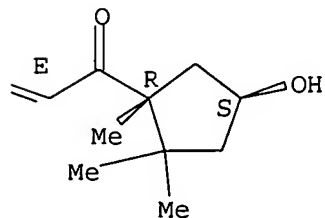
RN 465-42-9 HCAPLUS  
CN  $\beta, \kappa$ -Caroten-6'-one, 3,3'-dihydroxy-, (3R,3'S,5'R)- (9CI) (CA INDEX NAME)

Absolute stereochemistry.  
Double bond geometry as shown.

PAGE 1-A



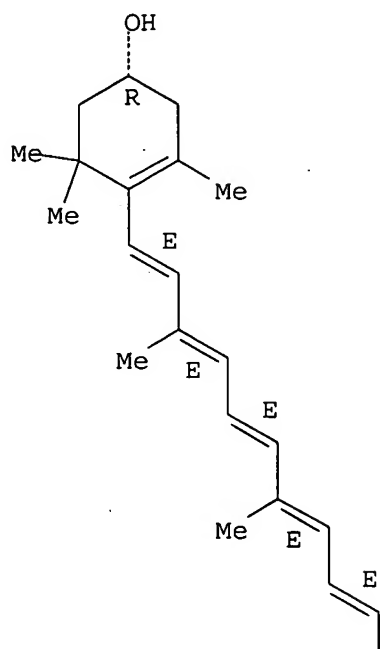
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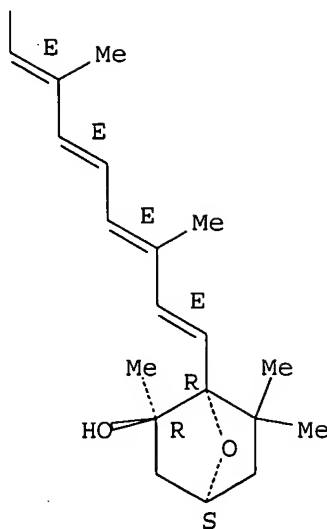
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Absolute stereochemistry.  
Double bond geometry as shown.

PAGE 1-A



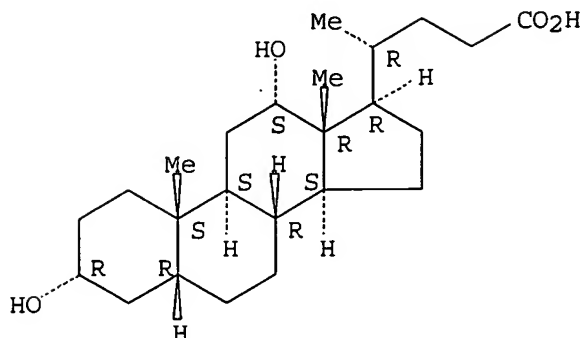
PAGE 2-A



IT 83-44-3, Deoxycholic acid 9001-92-7,  
Proteinase  
RL: BUU (Biological use, unclassified); BIOL (Biological study); USES  
(Uses)  
(increasing bioavailability of **carotenoids**)  
RN 83-44-3 HCAPLUS

CN Cholan-24-oic acid, 3,12-dihydroxy-, (3 $\alpha$ ,5 $\beta$ ,12 $\alpha$ )- (9CI)  
(CA INDEX NAME)

Absolute stereochemistry.



RN 9001-92-7 HCAPLUS  
CN Proteinase (9CI) (CA INDEX NAME)

\*\*\* STRUCTURE DIAGRAM IS NOT AVAILABLE \*\*\*

IT 9001-62-1, Lipase  
RL: CAT (Catalyst use); USES (Uses)  
(increasing bioavailability of **carotenoids**)

RN 9001-62-1 HCAPLUS  
CN Lipase, triacylglycerol (9CI) (CA INDEX NAME)

\*\*\* STRUCTURE DIAGRAM IS NOT AVAILABLE \*\*\*

L38 ANSWER 2 OF 5 HCAPLUS COPYRIGHT 2005 ACS on STN

ACCESSION NUMBER: 2002:906438 HCAPLUS

DOCUMENT NUMBER: 137:369127

TITLE: Increasing bioavailability of **carotenoids**

INVENTOR(S): Kanner, Joseph; Granit, Rina; Levy, Arie

PATENT ASSIGNEE(S): Agricultural Research Organization, The Volcani Center, Israel

SOURCE: PCT Int. Appl., 83 pp.

CODEN: PIXXD2

DOCUMENT TYPE: Patent

LANGUAGE: English

FAMILY ACC. NUM. COUNT: 2

PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
WO 2002094982	A2	20021128	WO 2002-IL398	20020521
WO 2002094982	A3	20030530		

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RW: GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZM, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM, AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, TR, BF, BJ, CF, CG, CI, CM, GA,



GN, GQ, GW, ML, MR, NE, SN, TD, TG

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IE, SI, LT, LV, FI, RO, MK, CY, AL, TR

JP 2004532635	T2	20041028	JP 2002-592445	20020521
US 2004166199	A1	20040826	US 2003-661606	20030915
US 2004175785	A1	20040909	US 2004-477520	20040412

PRIORITY APPLN. INFO.:  
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US 2001-915527 A 20010727  
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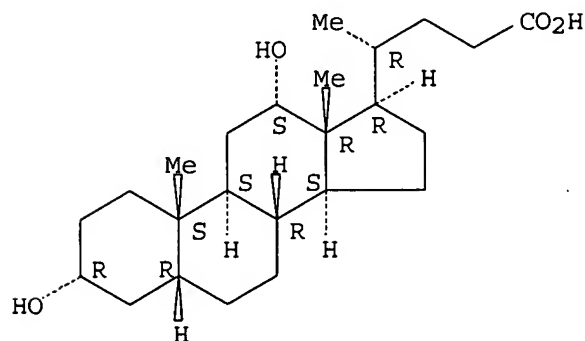
AB A method of increasing a fraction of free **carotenoids** in a source of **carotenoids** in which at least some of the **carotenoids** are fatty acid-esterified **carotenoids** is disclosed. The method is effected by contacting the source of **carotenoids** with an effective amount of an esterase under conditions effective in deesterifying the fatty acid-esterified **carotenoids**, thereby increasing the fraction of free **carotenoids** in the source of **carotenoids**.

IT 9001-62-1, Lipase  
RL: FFD (Food or feed use); BIOL (Biological study); USES (Uses)  
(Amano 6 and Amano 30; esterase for increasing bioavailability of esterified **carotenoids**)  
RN 9001-62-1 HCAPLUS  
CN Lipase, triacylglycerol (9CI) (CA INDEX NAME)

\*\*\* STRUCTURE DIAGRAM IS NOT AVAILABLE \*\*\*

IT 83-44-3, Deoxycholic acid 9013-79-0,  
Esterase 9016-18-6, Carboxy esterase 9025-98-3, Pectin esterase  
RL: FFD (Food or feed use); BIOL (Biological study); USES (Uses)  
(esterase for increasing bioavailability of esterified **carotenoids**)  
RN 83-44-3 HCAPLUS  
CN Cholan-24-oic acid, 3,12-dihydroxy-, (3 $\alpha$ ,5 $\beta$ ,12 $\alpha$ )- (9CI)  
(CA INDEX NAME)

Absolute stereochemistry.



RN 9013-79-0 HCAPLUS  
CN Esterase (9CI) (CA INDEX NAME)

\*\*\* STRUCTURE DIAGRAM IS NOT AVAILABLE \*\*\*

RN 9016-18-6 HCAPLUS

CN Esterase, carboxyl (8CI, 9CI) (CA INDEX NAME)

\*\*\* STRUCTURE DIAGRAM IS NOT AVAILABLE \*\*\*

RN 9025-98-3 HCAPLUS

CN Esterase, pectin (9CI) (CA INDEX NAME)

\*\*\* STRUCTURE DIAGRAM IS NOT AVAILABLE \*\*\*

IT 126-29-4P, Violaxanthin 144-68-3P, Zeaxanthin

465-42-9P, Capsanthin 472-70-8P,  $\beta$ -

Cryptoxanthin 7235-40-7P,  $\beta$ -

Carotene 60497-64-5P 103955-77-7P,

Capsolutein 152203-57-1P, cis-Capsanthin

RL: FFD (Food or feed use); PUR (Purification or recovery); BIOL

(Biological study); PREP (Preparation); USES (Uses)

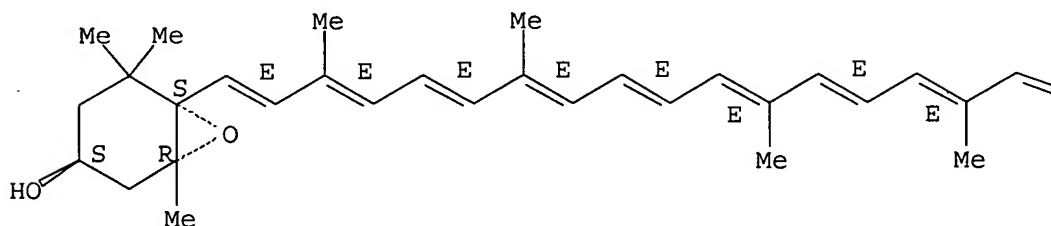
(esterase for increasing bioavailability of esterified  
carotenoids)

RN 126-29-4 HCAPLUS

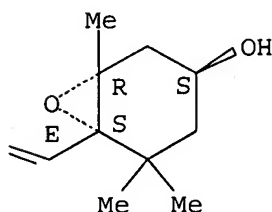
CN  $\beta,\beta$ -Carotene-3,3'-diol, 5,6:5',6'-diepoxy-5,5',6,6'-tetrahydro-,  
(3S,3'S,5R,5'R,6S,6'S)- (9CI) (CA INDEX NAME)

Absolute stereochemistry.  
Double bond geometry as shown.

PAGE 1-A



PAGE 1-B

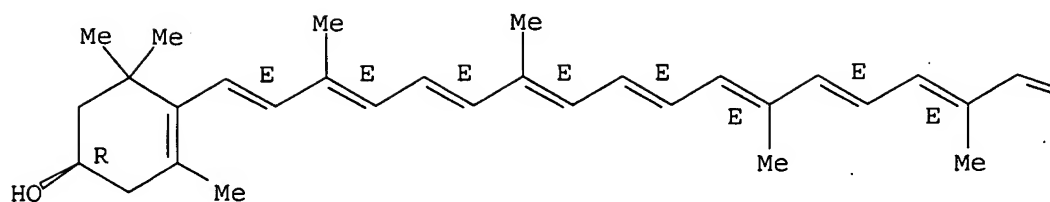


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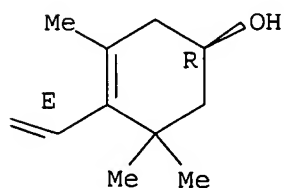
CN  $\beta,\beta$ -Carotene-3,3'-diol, (3R,3'R)- (9CI) (CA INDEX NAME)

Absolute stereochemistry.  
Double bond geometry as shown.

PAGE 1-A



PAGE 1-B

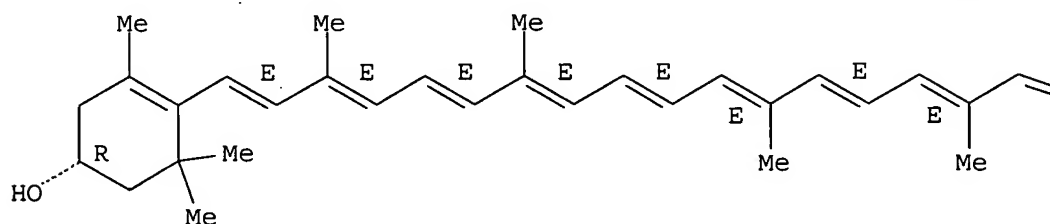


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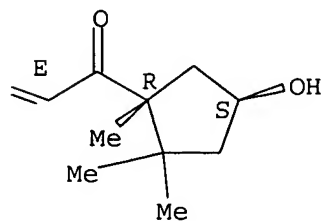
INDEX NAME)

Absolute stereochemistry.  
Double bond geometry as shown.

PAGE 1-A



PAGE 1-B

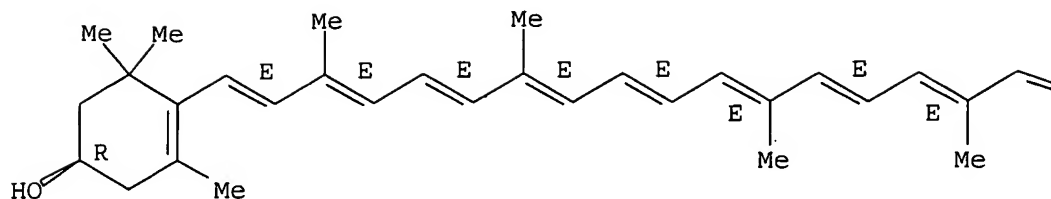


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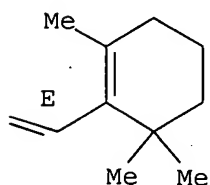
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Absolute stereochemistry.  
Double bond geometry as shown.

PAGE 1-A



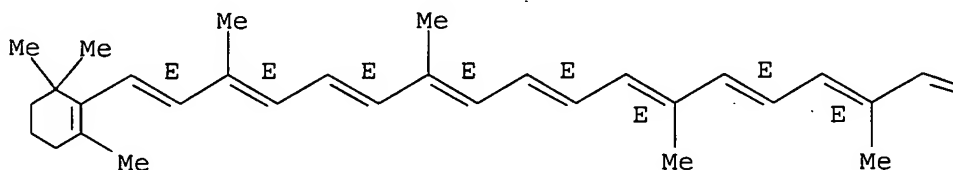
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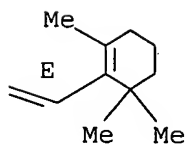
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Double bond geometry as shown.

PAGE 1-A



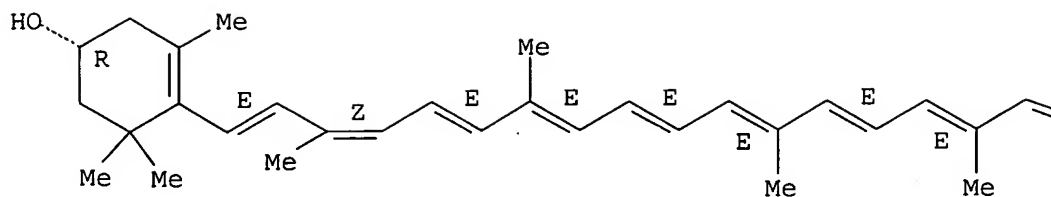
PAGE 1-B



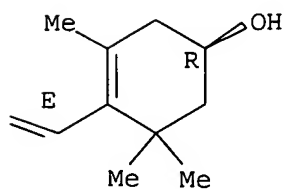
RN 60497-64-5 HCAPLUS  
 CN  $\beta$ , $\beta$ -Carotene-3,3'-diol, (3R,3'R,9-cis)- (9CI) (CA INDEX NAME)

Absolute stereochemistry.  
 Double bond geometry as shown.

PAGE 1-A



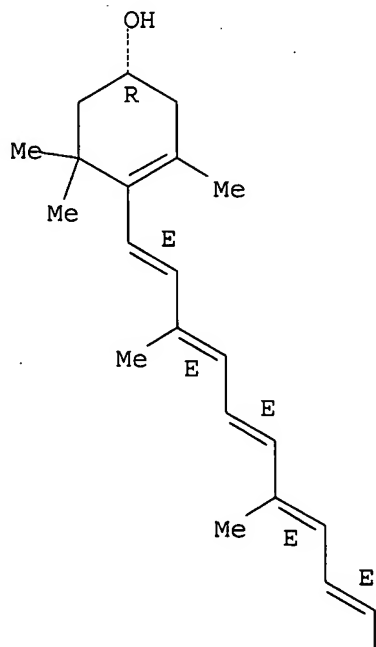
PAGE 1-B



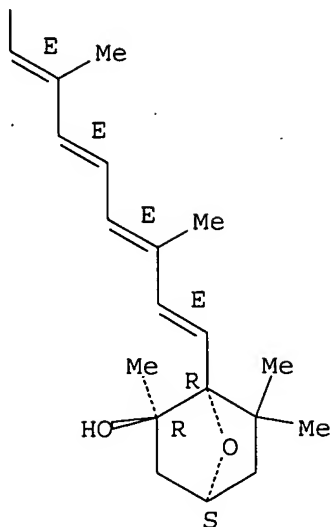
RN 103955-77-7 HCAPLUS

CN  $\beta,\beta$ -Carotene, 3,6-epoxy-5,6-dihydro-3',5-dihydroxy-,  
(3S,3'R,5R,6R)- (9CI) (CA INDEX NAME)Absolute stereochemistry.  
Double bond geometry as shown.

PAGE 1-A



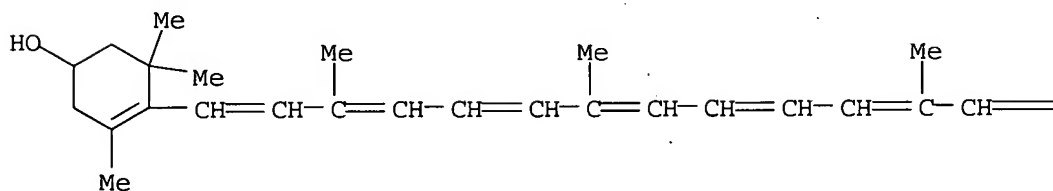
PAGE 2-A



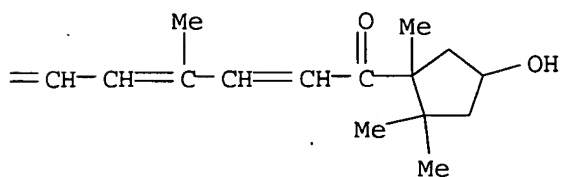
RN 152203-57-1 HCAPLUS

CN  $\beta,\kappa$ -Caroten-6'-one, 3,3'-dihydroxy-, (3R,3'S,5'R,cis)- (9CI)  
(CA INDEX NAME)

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IT 9001-92-7, Proteinase

RL: FFD (Food or feed use); BIOL (Biological study); USES (Uses)  
(protease; esterase for increasing bioavailability of esterified  
carotenoids)

RN 9001-92-7 HCAPLUS

CN Proteinase (9CI) (CA INDEX NAME)

\*\*\* STRUCTURE DIAGRAM IS NOT AVAILABLE \*\*\*

L38 ANSWER 3 OF 5 HCAPLUS COPYRIGHT 2005 ACS on STN

ACCESSION NUMBER: 2002:290946 HCAPLUS  
 DOCUMENT NUMBER: 136:280782  
 TITLE: Preparation method of red pigment from **capsanthin** and formulations using the pigment  
 INVENTOR(S): Chen, Yong  
 PATENT ASSIGNEE(S): Peop. Rep. China  
 SOURCE: Faming Zhuanli Shenqing Gongkai Shuomingshu, 8 pp.  
 CODEN: CNXXEV  
 DOCUMENT TYPE: Patent  
 LANGUAGE: Chinese  
 FAMILY ACC. NUM. COUNT: 1  
 PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
CN 1297965	A	20010606	CN 2000-132195	20001220 <--
PRIORITY APPLN. INFO.:			CN 2000-132195	20001220 <--

AB The preparation process comprises extracting **capsanthin** powder with > 80% ethanol for 1-3 h and hexane for 1-2 h sequentially to obtain a **capsanthin** oil resin, extracting the **capsanthin** oil resin with acetone and hexane in sequence, condensing the extract, steam distilling, drying to obtain a crude pigment product, treating the crude product with enzyme (lipase or pectase) to remove impurity, and purifying by column chromatog. (Al2O3 or silica gel as adsorbent and chloroform as eluant) to obtain the product. Antioxidant (dilauryl thiodipropionate, tert-Bu p-hydroxy toluene or their mixture) may be added to the purified **capsanthin** pigment. The **capsanthin** pigment can be made into microcapsule powder by spray-drying process with glucose stearate, monoglyceride stearate, Span-60, Tween-60 or their mixture as **emulsifying** agent and agar, acacia, gelatin, CM-cellulose, CM-cellulose Na or dextrin as excipient.

IT 9001-62-1, Lipase 9025-98-3, Pectase  
 RL: CAT (Catalyst use); USES (Uses)  
 (preparation method of red pigment from **capsanthin** and formulations using the pigment)

RN 9001-62-1 HCAPLUS  
 CN Lipase, triacylglycerol (9CI) (CA INDEX NAME)

\*\*\* STRUCTURE DIAGRAM IS NOT AVAILABLE \*\*\*

RN 9025-98-3 HCAPLUS  
 CN Esterase, pectin (9CI) (CA INDEX NAME)

\*\*\* STRUCTURE DIAGRAM IS NOT AVAILABLE \*\*\*

L38 ANSWER 4 OF 5 HCAPLUS COPYRIGHT 2005 ACS on STN

ACCESSION NUMBER: 2000:202055 HCAPLUS  
 DOCUMENT NUMBER: 133:149619  
 TITLE: Effect of alkali saponification, enzymatic hydrolysis and storage time on the total carotenoid concentration of Costa Rican crude palm oil  
 AUTHOR(S): Fernandez R., Xinia E.; Shier, Nathan W.; Watkins, Bruce A.  
 CORPORATE SOURCE: Nutrition Science Division, Indiana University, Bloomington, IN, 47405-7109, USA  
 SOURCE: Journal of Food Composition and Analysis (2000), 13(2), 179-187  
 CODEN: JFCAEE; ISSN: 0889-1575  
 PUBLISHER: Academic Press  
 DOCUMENT TYPE: Journal

LANGUAGE: English

AB **Carotenoids** from 10 portions of the same sample of crude palm oil were extracted using either enzymic hydrolysis (Lipase from *Candida rugosa*) or alkali to determine which method would preserve the greatest level of **carotenoids**. Also, after each extraction the effect of storage time on carotenoid levels was tested for the exts. obtained right after extraction, at 24 and 48 h after extraction. The carotenoid concentration was estimated using spectrophotometry. Findings showed consistently greater concns. of **carotenoids** and a slight decrease over time of 3.5% when enzymic hydrolysis was performed. This slight decrease is considered to be tech. unimportant since these samples exhibited greater concns. and the change was observed at time 0 but not after 24 and 48 h. Alkali-treated samples stayed stable over time but exhibited lower concns. of **carotenoids**. Alkali saponification required a longer time to perform and produced greater losses because of **emulsion** and soap formation. The difference in concentration by method was not significant as well as the difference in the recovery of an added standard; however, enzymic hydrolysis is still considered tech. and economically advisable as a routine method for the extraction of palm oil **carotenoids**. (c) 2000 Academic Press.

IT 9001-62-1, Lipase  
 RL: BSU (Biological study, unclassified); BIOL (Biological study)  
 (effect of alkali saponification, enzymic hydrolysis and storage time on carotenoid concentration of palm oil)

RN 9001-62-1 HCAPLUS  
 CN Lipase, triacylglycerol (9CI) (CA INDEX NAME)

\*\*\* STRUCTURE DIAGRAM IS NOT AVAILABLE \*\*\*

REFERENCE COUNT: 15 THERE ARE 15 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L38 ANSWER 5 OF 5 HCAPLUS COPYRIGHT 2005 ACS on STN

ACCESSION NUMBER: 2000:85025 HCAPLUS  
 DOCUMENT NUMBER: 132:121794  
 TITLE: Foodstuffs prepared from food materials and enzymes  
 INVENTOR(S): Soe, Jorn Borch  
 PATENT ASSIGNEE(S): Danisco A/s, Den.  
 SOURCE: PCT Int. Appl., 47 pp.  
 CODEN: PIXXD2  
 DOCUMENT TYPE: Patent  
 LANGUAGE: English  
 FAMILY ACC. NUM. COUNT: 1  
 PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
WO 2000005396	A1	20000203	WO 1999-IB1354	19990720 <--
W: AE, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, CA, CH, CN, CU, CZ, DE, DK, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MD, MG, MK, MN, MW, MX, NO, NZ, PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TR, TT, UA, UG, US, UZ, VN, YU, ZA, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM				
RW: GH, GM, KE, LS, MW, SD, SL, SZ, UG, ZW, AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, BF, BJ, CF, CG, CI, CM, GA, GN, GW, ML, MR, NE, SN, TD, TG				
AU 9947942	A1	20000214	AU 1999-47942	19990720 <--
AU 752215	B2	20020912		
EP 1098988	A1	20010516	EP 1999-931410	19990720 <--



EP 1098988 B1 20030115  
 R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT,  
 IE, FI

AT 231186	E	20030215	AT 1999-931410	19990720 <--
ES 2188190	T3	20030616	ES 1999-931410	19990720 <--
US 2002009518	A1	20020124	US 2000-750990	20001228 <--
US 2004091574	A1	20040513	US 2003-409391	20030408 <--

PRIORITY APPLN. INFO.:

GB 1998-15905	A	19980721 <--
GB 1998-24758	A	19981111 <--
WO 1999-IB1354	W	19990720 <--
US 2000-750990	A3	20001228 <--

AB The invention provides the use of a conversion agent, e.g. an enzyme, to prepare a good stuff comprising at least one functional ingredient from a food material, wherein the at least one functional ingredient has been generated from at least one constituent of the food material by the conversion agent. A fat blend containing soybean oil was treated with lipase obtained from *Aspergillus tubingensis*, dispersed in glycerol, for 12 h at 50°. The treated fat blend was then combined with water, skimmed milk powder, salt, ferment flavoring, soya lecithin,  $\beta$  - **carotene**, fat blend and butter flavoring to make a margarine.

IT 9001-62-1, Lipase PS 9013-79-0, Esterase  
 RL: FFD (Food or feed use); BIOL (Biological study); USES (Uses)  
 (foodstuffs prepared by enzymic reactions of food materials)

RN 9001-62-1 HCAPLUS

CN Lipase, triacylglycerol (9CI) (CA INDEX NAME)

\*\*\* STRUCTURE DIAGRAM IS NOT AVAILABLE \*\*\*

RN 9013-79-0 HCAPLUS

CN Esterase (9CI) (CA INDEX NAME)

\*\*\* STRUCTURE DIAGRAM IS NOT AVAILABLE \*\*\*